**Epidemiology of Helicobacter pylori in an underserved uninsured population at an urban non-profit clinic**

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### Introduction

The prevalence of Helicobacter pylori (H. pylori) infections in the United States (US) is dependent on a variety of factors, including socioeconomic status, race, and ethnicity. Higher prevalence rates are seen in low-income Black and white populations, people living close to the US/Mexico border, and immigrants from certain countries. The aim of this study is to determine the prevalence of H. pylori infection among the symptomatic patient population at an urban non-profit, underserved, uninsured clinic in Phoenix, AZ and compare this to the pooled prevalence reported in the general population of the US (pooled prevalence 35.6%, 95% confidence interval [CI] 30.0–41.1%).

### Research Question

Does the clinic population have a different prevalence of H. pylori than the prevalence reported in the general population as this is an at-risk population?

### Materials and Methods

A retrospective chart review included 9528 unique patient visits from February 2004 to December 2019. There were 628 total symptomatic patients (448 unique patients) tested for H. pylori infection by stool, serum, breath, or biopsy. Demographic information such as age, sex, ethnicity, and language spoken was collected. Patients under the age of 18 were excluded.

Patient demographic and clinical characteristics were reported as means, standard deviations for continuous variables and frequencies, and percentages for categorical variables. The 1-sample z-test of proportions was used to compare the clinic’s prevalence of H. pylori infection with the U.S. prevalence. Sub-group analysis by patient characteristics was completed to ascertain if differences between clinic and the U.S. exist between groups. Finally, logistic regression was used to ascertain associations between the patients’ characteristics and H. pylori within the clinic setting only. All p-values were 2-sided and p<0.05 was considered statistically significant.

### Results

Of the 448 unique patient test results, 193 were positive (43.1%). The average age was 52.1, 27.7% of patients were male, 96.7% identified as Hispanic, and 20.3% listed their preferred language as English. Using logistic regression adjusting for all other variable within the model, there was an increased odds ratio (OR) of H. pylori infection with age 50-59 (OR 2.77, 95% CI 0.31-24.9), male sex (OR 1.40, 95% CI 0.91-2.15), and Hispanic ethnicity (OR 1.19, 95% CI 0.38-3.79), although none of these were statistically significant. Using negative binomial regression, there was a statistically significant increase in incidence rate ratio (IRR) for Hispanic ethnicity (IRR 0.97, 95% CI 0.92-0.99), age (IRR 1.59, 95% CI 1.24, p<0.001), and English language preference (IRR 0.76, 95% CI 0.74-0.78, p<0.001). Patient sex was not statistically significant.

### Conclusion

- The prevalence of H. pylori infection was higher in this study’s patient population.
- Hispanic ethnicity, age, and English language preference were statistically significant factors for increased prevalence of infection.
- Study limitations include analysis of asymptomatic prevalence instead of true prevalence.
- Future directions include geographic mapping to find associations with prevalence data.

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### References